



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,562	11/27/2001	Tadayuki Tsutsui	111223	7418

25944 7590 08/06/2004
OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

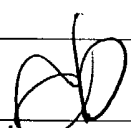
LAVILLA, MICHAEL E

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/993,562	Applicant(s) TSUTSUI ET AL.	
	Examiner Michael La Villa	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 9 is/are allowed.
- 6) ☒ Claim(s) 1,3-6, 8, 10, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 July 2004 has been entered.

Claim Objections

2. Claims 1 and 17 are objected to because of the following informalities: On two occasions in Claim 1 and on one occasion in Claim 17, the word "rupture" is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:
4. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1, 3-6, 8, 16, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. Regarding Claim 1, it is unclear what is meant by the term "predetermined". Where the term means "determined beforehand",

the term is indefinite since it is unclear what constitutes the metes and bounds of what is encompassed by the claimed subject matter.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:
7. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1, 3-6, 8, 16, and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. At paragraphs 12 and 13 of the originally filed Specification, applicant characterizes iron compositions required for obtaining various fatigue limit ratios and ranges thereof.

Applicant's claims, which are limited to particular fatigue limit ratio ranges, omit these iron composition limitations for obtaining various fatigue limit ratios and ranges thereof. Therefore, it is unclear what is the basis for ascertaining that the description of the Specification reasonably conveys to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention.

9. Claims 1, 3-6, 8, 16, and 17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for iron compositions that satisfy various compositional requirements, does not reasonably provide enablement for any iron-based composition. The

specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. At paragraphs 12 and 13 of the originally filed Specification, applicant characterizes iron compositions required for obtaining various fatigue limit ratios and ranges thereof. Applicant's claims, which are limited to particular fatigue limit ratio ranges, omit these iron composition limitations for obtaining various fatigue limit ratios and ranges thereof, despite the apparent description that meeting these compositional requirements is critical for achieving variously claimed fatigue limit ratios and ranges thereof. Hence, the breadth of the claimed invention does not appear to be enabled. Neither applicant's disclosure nor the reviewed prior art appears to teach or suggest how the claimed fatigue limit ratio ranges may be achieved without satisfying the described compositional requirements set forth in the Specification.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

11. A person shall be entitled to a patent unless –

12. (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an

Art Unit: 1775

application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claim 10 is rejected under 35 U.S.C. 102(e) as being anticipated by Tabuchi et al. USP 6,332,842. Tabuchi et al. teaches a torque limiting rotation hub, wherein the hub has the claimed mechanical fuse structure. See Tabuchi et al. (Figure 24; col. 11, line 30 through col. 12, line 8; col. 15, lines 15-46; col. 16, lines 3-26). Tabuchi exemplifies a hub made of iron steel. It would be expected that this material would be indistinguishable from the claimed Fe-based sintered material as it would also be iron-based and as applicant's product-by-process claimed sintering is not subject to any particular processing parameters that would necessarily preclude encompassing iron-based steel as disclosed by Tabuchi et al.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- i. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

16. Determining the scope and contents of the prior art.

17. Ascertaining the differences between the prior art and the claims at issue.
18. Resolving the level of ordinary skill in the pertinent art.
19. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen USP 4,846,769. Allen teaches a mechanical fuse of the claimed structure. See Allen (Figures 1, 4, and 6; col. 2, lines 27-48; and col. 5, lines 10-30). Allen does not teach that the fuse is comprised of Fe-based sintered alloy, but does suggest that the fuse may be comprised of hard, durable steel. It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the fuse of Allen from hard, durable steel. It would be expected that this material would be indistinguishable from the claimed Fe-based sintered material as it would also be iron-based and as applicant's product-by-process claimed sintering is not subject to any particular processing parameters that would necessarily preclude encompassing a hard, durable steel as disclosed by Allen.

21. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tabuchi et al. USP 6,332,842. Tabuchi et al. teaches a torque limiting rotation hub, wherein the hub has the claimed mechanical fuse structure. See Tabuchi et al. (Figure 24; col. 11, line 30 through col. 12, line 8; col. 15, lines 15-46; col. 16, lines 3-26). Tabuchi suggests that the hub may be comprised of sintered metal, including iron-based materials. In the event that the hub is not comprised of sintered iron, it would have been obvious to one of ordinary skill in the art at the time of the invention to

fabricate the hub from sintered iron-based materials, as Tabuchi teaches that effective articles may be comprised of sintered, iron-based materials.

Response to Amendment

22. In view of applicant's amendments and arguments, applicant traverses the section 102 rejection over Itoh of the Office Action mailed on 29 March 2004. Rejection is withdrawn.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1775

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael La Villa
03 August 2004

